

**UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF DELAWARE**

MICHAEL NINIVAGGI, JAKE MICKEY
and CAILIN NIGRELLI, individually and on
behalf of all others similarly situated,

Plaintiffs,

v.

UNIVERSITY OF DELAWARE,

Defendant.

Civil Action No. 20-cv-1478-SB

HANNAH RUSSO, individually and on be-
half of all others similarly situated,

Plaintiff,

v.

UNIVERSITY OF DELAWARE,

Defendant.

Civil Action No. 20-cv-1693-SB

**DECLARATION OF STEVEN P. GASKIN IN
SUPPORT OF CLASS CERTIFICATION**

1. I am Steven P. Gaskin. I make this Declaration based upon my personal knowledge and under authority of 28 U.S.C. § 1746.

I. Introduction and Qualifications

2. I am Steven P. Gaskin. I am an independent survey expert. I have served as a Principal at Applied Marketing Science, Inc., of Waltham, MA (“AMS”) from 2004 - 2020. I hold Bachelor of Science and Master of Science degrees in Management from the Sloan School of Management at the Massachusetts Institute of Technology (“MIT”). I have co-authored a number of articles and papers in such top-ranked peer-reviewed publications as Marketing Science and Management Science. In addition, I have authored several conference presentations on aspects of conjoint analysis.

3. I have served as an expert witness in various legal disputes. I have been called upon primarily to project what customers would have done in different market scenarios and to measure reductions in market value of product features, often through conjoint analysis. My professional qualifications, a list of cases in which I have testified at deposition or trial, and a list of publications I have authored are included in my Curriculum Vitae, attached as **Exhibit A** to this Declaration.

4. In undertaking this assignment, I relied on my extensive expertise in developing, testing, and analyzing surveys, and in interpreting qualitative and quantitative research about consumer attitudes, intentions, and behavior. The facts and/or data upon which I base the opinions and inferences reflected in this Declaration are of a type reasonably relied upon by experts in my field.

5. A complete list of materials I have considered to date in connection with this particular assignment is included as **Exhibit B**. To the extent that I review additional information that I deem worthy of discussing, I will supplement my Declaration and this list.

6. Part of the work for this analysis was performed under my direction by others at AMS.¹ Throughout this Declaration, I have used the terms “I” and “my” to refer to work performed by me and/or others under my direction.

7. My time as a survey expert is being compensated at a rate of \$800 per hour. Neither my nor AMS’ compensation is contingent upon the opinions I render or the outcome of this litigation.

II. Assignment

8. It is alleged that the University of Delaware (“Defendant” or the “University”) decided “not to issue appropriate refunds for the Spring 2020 term after canceling in-person classes and changing all classes to an online/remote format,² closing most campus buildings, and requiring all students who could leave campus to do so as a result of the Novel Coronavirus Disease (“COVID-19”).”³ Plaintiffs and members of the Class allege that they “were deprived of utilizing services for which they have already paid, such as access to campus facilities, student activities, health services and other opportunities” (the “Closure of the University Campus”).⁴

9. Plaintiffs and the putative class are therefore seeking a refund of tuition for in-person educational services, facilities, access and/or opportunities that Defendant has not provided. Plaintiffs seek, for themselves and a proposed class, Defendant’s disgorgement of the difference between the fair market value of the online learning provided versus the fair market value of the live, in-person instruction in a physical classroom on a physical campus with all the attendant

¹ <https://www.ams-inc.com/>

² When I refer to in-person classes in this Declaration, I mean the choice of in-person or online/remote courses, as opposed to online/remote courses only.

³ Consolidated Class Action Complaint, ¶ 1.

⁴ Id., ¶ 50.

benefits for which they contracted.⁵ It is my understanding that the proposed class is defined as “All undergraduate students enrolled in classes at the University of Delaware during the Spring 2020 semester who paid tuition” (the “Class”).

10. Assuming Plaintiffs’ allegations are true, I was asked by counsel for Plaintiffs to design and describe a market research survey and analysis that would enable me to assess the extent of any reduction in market value resulting from the Closure of the University Campus (measured in dollars and/or percentage terms),⁶ meaning the difference in market value between in-person classes and full access to the University’s campus and facilities, compared to the market value of online classes and no access to the University’s campus or facilities, at the time and point of acceptance. For this survey, I selected choice-based conjoint (“CBC”) analysis as the most appropriate survey methodology. I have used this method successfully in other litigation contexts where the objective was to determine the relative market values of a product or service with and without a particular product or service feature or claim on the label or given the disclosure or non-disclosure of a product or service feature at the time and point of acceptance.

11. In undertaking this assignment, I relied on my extensive expertise in developing, testing, and analyzing surveys, and in interpreting qualitative and quantitative research about consumer attitudes, intentions, and behavior.

⁵ Id., ¶ 127.

⁶ The conversion of dollar figures to a percentage amount is a relatively straightforward undertaking, which is done in a fair and conservative way that has been accepted by many courts (*see* ¶ 15 for examples of these cases). This conversion to a percentage amount is described in ¶ 55.

III. Summary of Expected Conclusions

12. The conjoint analysis I describe in this Declaration is designed to estimate any reduction in market value (measured in dollars and/or percentage terms) due to the Closure of the University Campus in Spring 2020, meaning the difference in market value between in-person classes and full access to the University's campus and facilities, compared to the market value of online classes and no access to the University's campus or facilities, at the time and point of acceptance.

13. The scientific methodology I used to design and intend to use to execute and analyze the survey in this Declaration is sound, reliable, and valid. The results will be relied upon to draw inferences about any reduction in market value attributable to the Closure of the University Campus at issue.

IV. Overview of Methodology

14. The basic methodology that I selected is known as web-based conjoint analysis. Conjoint analysis is a tool that enjoys wide use and acceptance in the field of market research. It was introduced to the field of market research in 1971 and is generally recognized by marketing science academics and industry practitioners to be the most widely studied and applied form of quantitative market value measurement. It has been shown to provide valid and reliable measures of consumer choices, and these have been shown to provide valid and reliable estimates of the relevant market value under scenarios related to those measured.⁷

⁷ Louviere, Jordan (1988). "Conjoint Analysis Modelling of Stated Preferences: A Review of Theory, Methods, Recent Developments and External Validity," *Journal of Transport Economics and Policy: Stated Preference Methods in Transport Research*, Vol. 22, No. 1 (Jan.), pp. 93-119.

15. I have performed similar analyses using similar methodologies before. For example, I was retained as an expert in *Sanchez-Knutson v. Ford Motor Co.*, No. 14-civ-61344 WPD (S.D. Fla.), and more recently, in *Banh v. American Honda Motor Co.*, No. 2:19-cv-05984 RGK (C.D. Cal.), *Braverman v. BMW of North America, LLC*, No. 16-cv-00966 TJH (C.D. Cal.), and *Cardenas v. Toyota Motor Corp.*, No. 18-22798-Civ-Moreno (S.D. Fla.), which were all class action lawsuits that concerned motor vehicle defects. Additionally, I was retained as an expert in a class action lawsuit, *Khoday v. Symantec Corp. and Digital River, Inc.*, No. 0:11-cv-00180 JRT (D. Minn.), which concerned a software product. I was also retained as an expert in a class action lawsuit, *In Re: Lenovo Adware Litigation*, No. 5:15-md-02624 RMW (N.D. Cal.), which concerned a software privacy and security issue. The *In Re Arris Cable Modem Consumer Litigation*, No. 17-cv-1834 LHK (N.D. Cal.) case involved latency problems with Internet modems. The *Hudock v. LG Electronics U.S.A., Inc.*, No. 16-cv-01220 JRT (D. Minn.) and *Koenig v. Vizio, Inc.*, No. BC702266 (Cal. Sup. Ct.) cases both involved refresh rates of LED televisions. The *Kaupelis v. Harbor Freight Tools USA, Inc.*, No. 19-cv-1203 JVS (C.D. Cal.) case involved a chainsaw defect. The *Hadley v. Kellogg Sales Company*, No. 5:16-cv-04955 LHK (N.D. Cal.) and *Krommenhock v. Post Foods LLC*, No. 3:16-cv-04958 WHO (N.D. Cal.) cases involved misleading health claims due to high sugar levels in cereals. Similarly, the *Milan v. Clif Bar and Company*, No. 3:18-cv-02354-JD (N.D. Cal.) case involved misleading health claims due to high sugar levels in nutrition bars. The *Bailey v. Rite Aid Corporation*, No. 4:18-cv-06926 YGR (N.D. Cal.) case involved a misleading claim on acetaminophen gelcaps. The *Maldonado v. Apple, Inc.*, No. 3:16-cv-04067-WHO (N.D. Cal.) case involved the market difference between new and remanufactured iPhones and iPads. The *Prescod v. Celsius Holdings, Inc.*, No. 19STCV09321 (Cal. Super. Ct., L.A. County) case involved a misrepresentation involving the use of artificial

ingredients in energy drinks. The *Bechtel v. Fitness Equipment Services, LLC, DBA Sole Fitness*, (S. D. Ohio), No. 1:19-cv-00726 case involved a misrepresentation concerning horsepower in treadmills. The *Smith v. The Ohio State University*, No. 2020-00321JD (OH), and *Weiman v. Miami University*, Nos. 2020-00614JD (OH) and 2020-00644JD (OH) cases involved tuition refunds due to campus closures during the COVID-19 pandemic. In all nineteen cases, I proposed using a similar methodology to the one I have used here. The courts found the methodology suitable as a basis for calculating damages and certified the classes. After the courts accepted my damages methodology and granted class certification, I performed full analyses for the *Ford*, *Honda*, *Toyota*, *BMW*, *Symantec*, *Lenovo*, *Arris*, *LG Electronics*, *Vizio*, *Kellogg*, *Post*, *Apple*, and *Clif Bar* lawsuits, in a way generally consistent with the methodology I use here.

16. The general idea behind conjoint analysis is that the market value for a particular product is driven by features, or descriptions of features, embodied in that product. During the survey, consumers are shown sets of product profiles made up of varying features (“choice sets”) and asked, as part of a series of “choice tasks,” to indicate their preferred product profile among those shown. At no point are respondents asked to indicate directly how much they would pay for any product or given set of features; rather, the analysis is based on choices respondents make among alternative product profiles like those that are shown in the choice tasks described in this Declaration (see Figure 1 below as an example of a single “choice task”).

Figure 1: Choice Task Example

If these were your only options and you had to choose a university to enroll in, which university would you choose?
 Choose by clicking "Select" for one of the options below. Click or tap the arrow button at the bottom to continue.

Please assume that the universities do not vary on any features other than the features that are shown to vary. As a reminder, please assume you are actually considering enrolling as an undergraduate at a college or university, and you are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.

You may click or tap on any attribute to review the levels included in each at any time.

If you are taking the survey on a mobile device, you may need to turn your phone to get a wider screen. You also will need to swipe and view all three products before making your selections.

(1 of 12)

University	Stony Brook University - SUNY	University of Maryland - College Park	University of Delaware
<u>Undergraduate Teaching Ranking</u>	Ranked in the top 6-10 best undergraduate teaching among public universities in the U.S.	Ranked top 5 best undergraduate teaching among public universities in the U.S.	Undergraduate teaching is not in the top 10 among public universities in the U.S.
<u>Ethnic Diversity Index</u>	The Ethnic Diversity Index is a .6 out of 1	The Ethnic Diversity Index is a .7 out of 1	The Ethnic Diversity Index is a .5 out of 1
<u>Class and Campus Format</u>	Classes are offered in person; have access to campus and facilities	Classes held online; have access to campus and facilities	Classes held online; no access to campus or facilities
<u>Student-Faculty Ratio</u>	12:1 student-faculty ratio	19:1 student-faculty ratio	17:1 student-faculty ratio
<u>4-Year Graduation Rate</u>	57% Graduation Rate	73% Graduation Rate	61% Graduation Rate
<u>Tuition per Semester</u>	\$13,750	\$6,750	\$10,250
	Select	Select	Select

Given your knowledge of universities, would you or would you not **actually be willing to enroll at the university that you chose above with the tuition indicated?** As a reminder, please assume you are actually considering enrolling as an undergraduate at a college or university, and you are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.

Yes No

17. I used Sawtooth Software (<http://sawtoothsoftware.com>) for the programming of the survey and will make use of it for the analysis of the survey's results. Sawtooth Software is a

leading provider of conjoint analysis software.⁸ Its software is used by academics and business practitioners around the world. Conjoint analysis provides respondents with realistic choices among hypothetical products that vary on multiple feature categories. Its use of appropriate statistical methods, including Hierarchical Bayes (“HB”) regression analysis,⁹ enhances predictive ability, making the conjoint analysis even more reliable and valid.

18. The randomization of the order and appearance of the features and levels in the survey helps keep the respondent from focusing on a single feature or attribute,¹⁰ which minimizes demand artifacts that might be induced. A “demand artifact” is similar to a leading question in that it encourages respondents to answer a question in a way that the researcher would prefer or that they feel the researcher is “demanding.”¹¹

19. The conjoint analysis uses data from the survey on the feature levels of the product profiles shown, and the resulting choices of respondents, to generate partial contributions of these feature levels (“partworths”) to overall product utility.¹² The partworths for feature levels are identified with the estimation methods so that the partworths best predict customers’ choices from the survey. Conjoint analysis allows for the prediction of the probability that customers will choose any product profile that can be described by the feature levels and can do so for any competitive set of products. I can also simulate how choice shares would change in a market based on a change in overall price. By making use of these capabilities, CBC allows me to determine

⁸ Sawtooth Software, Inc.’s Lighthouse Studio package, which is a well-known and widely used software system for these types of applications, will be used to program the conjoint analysis section of the questionnaire and analyze the survey results.

⁹ *The CBC System for Choice-Based Conjoint Analysis (Version 9)*, Sawtooth Software Technical Paper Series, 2017.

¹⁰ “Attribute” is another commonly-used term for a product feature. I will be making use of it below.

¹¹ Simonson, I., and R. Kivetz (2012). “Demand Effects in Likelihood of Confusion Surveys: The Importance of Marketplace Conditions,” *Trademark and Deceptive Advertising Surveys: Law, Science, and Design*, Shari Seidman Diamond and Jerre B. Swann, Eds, Chicago, IL.: ABA Publishing, American Bar Association, p. 243.

¹² “Utility” is an economic term referring to the total satisfaction received from consuming a good or service.

the reduction in market value (measured in dollars and/or percentage terms) between in-person classes and full access to the University's campus and facilities, compared to the market value of online classes and no access to the University's campus or facilities.

20. As noted above, to estimate the partworths, I will use a method known as Hierarchical Bayes (HB) regression. HB provides reliable and valid conjoint analysis estimates of partworths. It is the most commonly used estimation method for choice-based conjoint analysis.¹³ HB regression makes use of data from the overall sample of respondents when estimating the partworths for each individual respondent. Its use enables me to appropriately balance the number of choice tasks in each survey with the number of partworths that need to be estimated. I have observed in other conjoint surveys that I have conducted that this reduction in the number of choice tasks needed limits respondent wear-out.¹⁴

21. Hierarchical Bayes Choice-Based Conjoint ("HB CBC") estimation enables me to obtain more precise estimates of market level distributions from individual, respondent-level estimates. HB CBC partworth estimates are best suited for calculating statistics at the market level, such as the average or median value of certain variables of interest, and for simulating the overall, aggregate behavior of the market.

22. Conjoint analysis uses information from consumer behavior theory which makes the partworth estimates even more precise. For example, consumer behavior theory indicates that preferences are monotonic in price, i.e., all else equal, people prefer to pay less than to pay more. Ignoring this theory would result in estimating a model that does not use all of the available data.

¹³ It is often referred to as the "gold standard" for CBC estimation. *See, for example,* https://sawtoothsoftware.com/help/lighthouse-studio/manual/estimating_utilities_with_hb.html

¹⁴ If too many questions are asked of a respondent, then the respondent may "wear out," that is, response errors may increase as the respondent tires. Not only did I limit the number of questions in the choice task to minimize wear out, but I also pretested the questionnaire to assure that respondents did not experience wear out. *See* Section VI for details on pretesting.

23. In CBC, customers are shown sets of product profiles (called the “choice sets”) and asked to choose the profile that they most prefer, or, in other words, the profile that they would choose if they were making a choice, and if the choice set described the only products that were available to them.

24. In the survey, I present respondents with a series of twelve choice tasks in which they choose from three university profiles (and indicate if they would choose none at all). Before being presented with the choice task, respondents are asked to make certain assumptions, including the following:

- You have applied and been accepted to each of these universities.
- You are actually considering enrolling as an undergraduate at a college or university.
- Each of the features shown about each university is true, even if you know or think otherwise, including cost of tuition.
- The universities do not vary on any features other than the features that are shown to vary in the exercise.
- You are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.

25. Product profiles are composed of and vary by seven features in the survey: (i) University; (ii) Undergraduate Teaching Ranking; (iii) Student-Faculty Ratio; (iv) 4-Year Graduation Rate; (v) Ethnic Diversity Index; (vi) Class and Campus Format; and (vii) Tuition per Semester.

26. When price (in this case, the cost per semester for attending the University) is one of the measured features in a conjoint analysis, the value (negative or positive) that the market places on changes in features can be expressed in dollars and/or percentage terms. That is,

reduction in market value can be calculated as the price reduction needed to compensate, for the Class, for the loss of a feature or a change to a worse level of a feature. Similarly, added market value, or the price premium customers would pay, for the Class, for the inclusion of a feature or a better level of a feature can be calculated. Because CBC is based directly on customer choices, it is, in my opinion, an ideal survey method to determine the reduction in market value that might result from the Closure of the University Campus at issue in this lawsuit. In particular, we can determine the reduction in market value (measured in dollar and/or percentage terms) between the University with in-person classes and full access to the University's campus and facilities, compared to the market value of the University with online classes and no access to the University's campus or facilities. It is my opinion, based on conversations with Plaintiffs' economics expert, Mr. Colin Weir, that the conjoint methodology set forth in this Declaration accounts for appropriate supply side factors, including that (1) the price range used in the survey reflects the actual market tuition prices that prevailed during the relevant semester; and (2) the number of students used (or assumed) in the damages calculations reflects the actual number of students enrolled during the relevant semester (the number of students enrolled being fixed as a matter of history).¹⁵

V. Questionnaire Development

27. To determine the appropriate attributes and levels for the trade-off exercises in this survey, I first determined the features that would be used to describe each product profile. The attributes and levels included in the conjoint choice task for the survey do not need to include every possible feature of the school at issue; in fact, it would be contrary to best practices to do so. The

¹⁵ See the Declaration of economist Colin Weir for further information.

main purposes of having different attributes and levels are to provide a reasonable and engaging choice task, and to help disguise our chief interest in respondents' reactions—here, their reactions to the Class and Campus Format attribute. In the survey, all attributes other than the ones shown are held constant.

28. As explained above, one of the attributes in the conjoint survey is price (Tuition per Semester), which allows for a determination of the differences in market values among various attributes and levels and allows me to calculate any reduction in market value.

29. “Class and Campus Format” refers to the student’s university experience and whether or not classes and campus facilities are offered in-person or remotely. I am not opining on the truth or falsity of the allegations of the Complaints regarding the Closure of the University Campus, or on whether Plaintiffs will prevail on the merits. I am relying on the Complaints, discussions with counsel, and the documents listed in Exhibit B for the description of the Closure of the University Campus and student experience in the survey.

30. To determine the remaining attributes, I consulted the Complaint, used information from University of Delaware’s website pages, reviewed the admissions websites and third-party websites of University of Delaware’s competitors,¹⁶ reviewed various college decision websites,¹⁷ and reviewed enrollment data for University of Delaware and competitors in order to choose features and tuition values that would be recognizable to a common audience and would simulate an undergraduate education choice experience.¹⁸ After conducting this research, I included the following attributes in the survey:

¹⁶ See Exhibit B (Materials Reviewed) for more details.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

- “University” refers to the college or university in which the respondent is considering enrolling,
- “Undergraduate Teaching Ranking” refers to the U.S. News and World Report ranking of undergraduate teaching in public universities in the U.S.,
- “Student-Faculty Ratio” refers to the number of students in comparison to how many faculty members there are at the college or university,
- “4-Year Graduation Rate” refers to the percentage of undergraduate students that graduate in four years,
- “Ethnic Diversity Index” indicates the degree to which the college or university is ethnically diverse according to U.S. News and World Report,
- “Tuition per Semester” is also a necessary variable so that the value placed by respondents on the various features can be expressed in terms of price. The range of prices I am using in the conjoint analysis will mirror those actually observed in the market and will reflect residence in and out of the states in which the University and competitors are located.

31. The questionnaire is programmed into a web-based software system designed for administering and analyzing such questionnaires. Respondents answer all survey questions via their desktop, laptop, tablet, or smartphones.

32. To avoid order bias, the attributes are shown in a different order, chosen at random, for each respondent (except University and Tuition per Semester, which are always first and last, respectively).

33. It is standard survey practice to avoid indicating the sponsor and purpose of the survey to ensure respondents’ objectivity and to make respondents “blind” to the sponsor and

purpose of the survey. The design and administration of my survey is characterized as blind to the respondents (as was verified by the pretest interviews).¹⁹ Because the survey is administered via the Internet, respondents are not exposed to human interviewers, thereby eliminating the possibility of an interviewer communicating the sponsor or purpose of the survey and influencing the outcome (intentionally or not). An Internet-based survey avoids demand artifacts that might be induced by means of intonation or facial expressions during the delivery of particular questions or answers. An Internet-based survey removes, or at least greatly diminishes, any “interviewer bias” which may arise from the desire of the respondents to please, displease, or impress the interviewer. (One might say that the computer, as well as the respondent, is blind to the survey’s purpose; hence the survey is double-blind.)

VI. Pretesting the Questionnaire

34. The conjoint questionnaire was pretested with 20 respondents. The pretests consisted of 10 preliminary pretest interviews that were conducted to identify and correct any possible issues with the survey, and 10 final pretest interviews that were verbal debriefs with respondents after they had answered the survey questions. I tested the following: that respondents did not have difficulty with the questions and instructions; that they understood the choice exercise they were asked to perform; that they looked at all or almost all of the features in making their choices; and that they did not think the questions were leading or biased. Additionally, I asked respondents about their beliefs regarding the sponsor and purpose of the survey. Pretesting ensured that respondents understood and would continue to understand the questions, instructions, and

¹⁹ Diamond, Shari S., (2011). “Reference Guide on Survey Research,” *Reference Manual on Scientific Evidence (Third Edition)*, Washington, D.C.: The National Academies Press, pp. 410-411.

descriptions presented in the questionnaire. This also ensured that the survey flowed smoothly. Following standard procedures, no pretest responses or pretest respondents were included in the final sample.²⁰

VII. Identifying the Sample

35. I am using a web panel provider²¹ to target United States residents aged 16 and over who indicate that they personally applied to the University of Delaware or one of its competitors for undergraduate education in the past 20 years. I am also relying on a list of 15,000 records provided by Defendants which includes email addresses of current and former University of Delaware students.²²

36. Internet surveys are a common form of market research. In addition, there is evidence that data collected using Internet surveys do not differ in quality from that collected using phone or mall-intercept methodologies.²³

37. For the survey, potential respondents from the list of student email addresses are sent an email invitation to participate in the survey. Potential respondents from competitive universities are selected at random through a web panel and sent an invitation to go to a website to complete the survey. Each invitation includes a URL with an embedded password that is matched against a list of valid passwords and against the list of passwords that have already been used. (The former assures that only valid respondents complete the questionnaire. The latter

²⁰ See Exhibits C and D for more information on pretesting.

²¹ Prodege (<https://www.prodege.com/>).

²² Stipulation and Proposed Order for Release of E-mail Addresses, pp. 1-2 (Filed 04/13/2022). I am using Luth Research to recruit survey respondents from this list.

²³ Poret, Hal. (2010). "A comparative empirical analysis of online versus mall and phone methodologies for trademark surveys," *The Trademark Reporter*, Vol. 100, No. 3 (May-June), pp. 756-807.

assures that each respondent completes the questionnaire at most once.) Respondent panels motivate respondents to participate in surveys by giving them a small monetary incentive. The incentive is not contingent on respondents providing particular answers in the conjoint task and there is consensus in the industry that such small monetary incentives do not lead to any bias in a survey's results.²⁴

38. After clicking the link from the email invitation, respondents are shown a browser window with an introduction followed by a CAPTCHA challenge to ensure that responses are not computer-generated.²⁵ After completing the CAPTCHA, respondents move on to the survey. The panel provider has security procedures in place to prevent anyone other than panel members from entering the survey, including “bots,” and prevent respondents from taking the survey more than once. As an additional security procedure, the 15,000 University of Delaware email addresses were each assigned a unique ID, and only potential respondents with those IDs are allowed to enter and complete the survey.

39. To provide further validation, respondents are asked their age and gender, which is compared to values provided to the panel company. Any respondent whose stated age and gender do not match the values previously provided to the panel company is terminated from the survey.

40. Following validation, respondents are screened to ensure that they personally applied to the University of Delaware or one of its competitors for 4-year undergraduate education in the past 20 years. I plan to have at least 300 respondents complete the survey.

²⁴ Singer, Eleanor (2012). “The Use and Effects of Incentives in Surveys,” Survey Research Center, Institute for Social Research, University of Michigan, p. 17.

²⁵ A CAPTCHA challenge refers to a program that protects websites against “bots” (i.e., computer-generated responses) by generating and grading tests that humans can pass, but current computer programs cannot. The acronym “CAPTCHA” stands for Completely Automated Public Turing Test to Tell Computers and Humans Apart.

41. A sample size of 300 respondents is more than sufficient for making scientifically valid conclusions on the basis of the survey. This sample size exceeds the minimum requirements laid out by Sawtooth Software for sample size in a conjoint analysis survey.²⁶ I have made, and validated, forecasts based on quantitative surveys of 300 respondents, and sample sizes such as these are commonly used by large businesses to make important decisions.

42. After data are collected, respondents' data will be reviewed for "speeding," "lagging," and "straightlining" according to generally accepted data cleaning procedures. To establish the speeding criteria, the survey is tested internally to determine the fastest reasonable completion time for the survey as a whole, as well as for the conjoint analysis choice tasks themselves. "Lagging" respondents are those whose time to complete the survey shows that they did not follow the instruction to take the survey in one session. "Straightlining" is judged based on an invalid pattern of responding to the conjoint portion of the survey (i.e., inputting the same response to at least 11 of the 12 choice tasks in the conjoint exercise).

VIII. Survey Administration

43. The screening portion of the survey begins by asking respondents which type of device they are using to complete the survey. Respondents on a desktop, laptop, tablet, or smartphone are allowed to continue; those who indicate that they are using another mobile or electronic device receive an instruction that the survey is not formatted for viewing on such devices and are prompted to log back into the survey using a desktop, laptop, tablet, or smartphone. Next, gender and age are collected to make sure that they match panel records. Respondents' state of

²⁶ Orme, B. (2020). "Chapter 7: Sample Size Issues for Conjoint Analysis," *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research, (Fourth Edition)*, Manhattan Beach, CA.: Research Publishers LLC., p. 65.

residence currently and at the time of applying for undergraduate education is also collected. Respondents are asked if they or anyone in their household work for certain types of companies. Respondents who indicate that they or someone in their household work for a marketing or market research firm, a public relations or advertising agency, or administration or faculty at a college or university are not allowed to continue. Screening also ensures that I sample those respondents who have personally applied to the University of Delaware or one of its competitors for 4-year undergraduate education in the past 20 years.

44. To avoid influencing respondents' answers and survey results and to minimize answers from uninformed respondents, I use filters in my survey question response options, such as the answer option of "None of the above." I also randomize answer options in the survey questions where it is appropriate.

45. In the main part of the survey, respondents are introduced to the conjoint exercise and shown a list of the college/university features that are varied in the product profiles shown in the choice tasks that are to follow. They are asked to make certain assumptions while completing the exercise.²⁷

46. Respondents are then shown a set of introductory descriptions of the features that each university profile shown in the conjoint exercise will include. Respondents are shown the description for each feature prior to continuing to the choice tasks. These descriptions are made accessible later in the survey, while completing the choice exercise, by clicking on the name of the

²⁷ Assumptions include the following: 1) You have applied and been accepted to each of these universities; 2) You are actually considering enrolling as an undergraduate at a college or university; 3) Each of the features shown about each university is true, even if you know or think otherwise, including cost of tuition; 4) The universities do not vary on any features other than the features that are shown to vary in the exercise; and 5) You are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.

feature in each choice task. The features and feature levels that are presented to respondents in the survey's choice tasks are as follows:

University

The universities you will choose from vary by **University**.

- Some of these universities have satellite or regional campuses – please assume you would be enrolling at the main campus.

The Universities shown (in alphabetical order) in the exercise include:

North Carolina State University	Stony Brook University – SUNY	University of Delaware	University of Maryland – College Park	University of Pittsburgh
Number of undergraduate students: ~25,973	Number of undergraduate students: ~17,909	Number of undergraduate students: ~19,678	Number of undergraduate students: ~30,511	Number of undergraduate students: ~19,200
Main Campus Location: Raleigh, NC	Main Campus Location: Stony Brook, NY	Main Campus Location: Newark, DE	Main Campus Location: College Park, MD	Main Campus Location: Pittsburgh, PA
Fall 2019 Acceptance Rate: 45%	Fall 2019 Acceptance Rate: 44%	Fall 2019 Acceptance Rate: 71%	Fall 2019 Acceptance Rate: 44%	Fall 2019 Acceptance Rate: 57%
Fall 2019 SAT composite score for the 25th to 75th percentile of enrolled students: 1250 – 1420	Fall 2019 SAT composite score for the 25th to 75th percentile of enrolled students: 1230 – 1440	Fall 2019 SAT composite score for the 25th to 75th percentile of enrolled students: 1160 – 1350	Fall 2019 SAT composite score for the 25th to 75th percentile of enrolled students: 1280 – 1470	Fall 2019 SAT composite score for the 25th to 75th percentile of enrolled students: 1260 – 1440
Fall 2019 ACT composite score for the 25th to 75th percentile of enrolled students: 27 – 32	Fall 2019 ACT composite score for the 25th to 75th percentile of enrolled students: 26 – 32	Fall 2019 ACT composite score for the 25th to 75th percentile of enrolled students: 24 – 30	Fall 2019 ACT composite score for the 25th to 75th percentile of enrolled students: 29 – 34	Fall 2019 ACT composite score for the 25th to 75th percentile of enrolled students: 28 – 33

You will have access to this information throughout this survey.

Undergraduate Teaching Ranking

The universities you will choose from vary by **Undergraduate Teaching Ranking**.

- The rankings shown have been sourced from U.S. News and World Report, an American media company that publishes news, opinions, consumer advice, rankings, and analysis.
- U.S. News is a recognized leader in college, grad school, hospital, mutual fund, and car rankings.
- College presidents, provosts, and admissions deans who participated in the annual U.S. News peer assessment survey were asked to nominate up to 15 schools in their Best Colleges ranking category that have a strength in undergraduate teaching.
- The lists, organized by U.S. News ranking categories, include the colleges that received the most nominations. They are ranked in descending order based on the number of top-15 nominations they received. Schools had to receive seven or more nominations to be ranked.

The Undergraduate Teaching Ranking levels shown in the exercise include:

Undergraduate teaching is not in the top 10 among public universities in the U.S.	Ranked in the top 6-10 best undergraduate teaching among public universities in the U.S.	Ranked top 5 best undergraduate teaching among public universities in the U.S.
The university's undergraduate teaching is not in the top 10 according to the U.S. News and World Report	The university's undergraduate teaching is ranked in the top 6-10 according to the U.S. News and World Report	The university's undergraduate teaching is ranked in the top 5 according to the U.S. News and World Report

You will have access to this information throughout this survey.

Student-Faculty Ratio

The universities you will choose from vary by **Student-Faculty Ratio**.

- A student-faculty ratio indicates the number of full-time-equivalent students in comparison to how many full-time-equivalent faculty members there are at the college or university.
- This excludes faculty and students of law, medical, business, and other stand-alone graduate or professional programs in which faculty members teach virtually only graduate-level students.
- Faculty numbers also exclude graduate or undergraduate students who are teaching assistants.

The Student-Faculty Ratio levels shown in the exercise include:

19:1 student-faculty ratio	17:1 student-faculty ratio	15:1 student-faculty ratio	12:1 student-faculty ratio
There is 1 faculty member for every 19 students	There is 1 faculty member for every 17 students	There is 1 faculty member for every 15 students	There is 1 faculty member for every 12 students

You will have access to this information throughout this survey.

4-Year Graduation Rate

The universities you will choose from vary by **4-year Graduation Rate**.

- The 4-year graduation rate indicates the percent of undergraduate students who graduate in four years.
- To be enrolled full-time, students must take 12 credits per semester. To graduate in four years, students must take and pass at least 15 credits per semester.

The 4-Year Graduation Rate levels shown in the exercise include:

57% Graduation Rate	61% Graduation Rate	65% Graduation Rate	69% Graduation Rate	73% Graduation Rate
57% of undergraduate students graduate in four years	61% of undergraduate students graduate in four years	65% of undergraduate students graduate in four years	69% of undergraduate students graduate in four years	73% of undergraduate students graduate in four years

You will have access to this information throughout this survey.

Ethnic Diversity Index

The universities you will choose from vary by **Ethnic Diversity Index**.

- The scores shown have been sourced from U.S. News and World Report, an American media company that publishes news, opinions, consumer advice, rankings, and analysis.
- U.S. News is a recognized leader in college, grad school, hospital, mutual fund, and car rankings.
- To identify colleges where students are most likely to encounter undergraduates from racial or ethnic groups different from their own, U.S. News factors in the total proportion of minority students and the overall mix of groups. The data is drawn from the Fall 2020 total undergraduate student body.
- The ethnic categories used in the calculations are non-Hispanic African-American, Hispanic, American Indian, Pacific Islander/Native Hawaiian, Asian, non-Hispanic white, and multiracial (two or more races).
- The formula produces a diversity index that ranges from 0 to 1. The closer a school's number is to 1, the more diverse the student population.

The Ethnic Diversity Index levels shown in the exercise include:

The Ethnic Diversity Index is a .4 out of 1	The Ethnic Diversity Index is a .5 out of 1	The Ethnic Diversity Index is a .6 out of 1	The Ethnic Diversity Index is a .7 out of 1
The Ethnic Diversity Index for this school is a .4 out of 1	The Ethnic Diversity Index for this school is a .5 out of 1	The Ethnic Diversity Index for this school is a .6 out of 1	The Ethnic Diversity Index for this school is a .7 out of 1

You will have access to this information throughout this survey.

Class and Campus Format

The universities you will choose from vary by **Class and Campus Format**.

- Class and campus format indicate two things about a student's university experience:
 - Whether classes are conducted online or in person at the university's campus.
 - When classes are offered in person, students may have the option to (but not be required to) take them online instead.
 - Whether or not students have physical access to the university campus, its facilities, and the accompanying campus experience.

The Class and Campus Format levels shown in the exercise include:

Classes held online; no access to campus or facilities	Classes held online; have access to campus and facilities	Classes are offered in person; have access to campus and facilities
Classes are held online, and students have no access to the campus, its facilities, or the campus experience	Classes are held online, but students still have access to the campus, its facilities, and the campus experience	Classes are offered in person and students have access to the campus, its facilities, and the campus experience

You will have access to this information throughout this survey.

Tuition per Semester

The universities you will choose from vary by **Tuition per Semester**.

- Tuition at some of the universities in the exercise may be called an instructional fee.
- The tuition listed below does not include any changes in the amount you would pay due to financial aid, work-study, scholarships, or other forms of tuition support.
- This tuition price does not include room and board, the general fee, or any other additional fees. Room and board would be an additional charge if you choose to and are able to live on campus.

The Tuition per Semester levels shown in the exercise include:

\$3,250	\$6,750	\$10,250	\$13,750	\$17,250
The price of tuition per semester is \$3,250	The price of tuition per semester is \$6,750	The price of tuition per semester is \$10,250	The price of tuition per semester is \$13,750	The price of tuition per semester is \$17,250

You will have access to this information throughout this survey.

47. Respondents then continue to the choice tasks section of the conjoint survey. They are shown a sample choice task, and then a series of twelve choice tasks, each containing a choice set of three different, hypothetical university options (“university profiles”) that are described by the combinations of levels of the features that I selected. The choice sets are chosen by the Sawtooth Software program using a scientific experimental design to ensure that respondents see each level of each feature in the choice sets with roughly the same frequency. The designs are highly efficient, i.e., they provide the estimates of partworths with high precision.²⁸

48. The attributes’ order is randomized across respondents, but not within respondents, in the choice exercises, with the exception of University and Tuition per Semester, which are always listed first and last, respectively. For each set of three universities, respondents are asked: “If these were your only options and you had to choose a university to enroll in, which university

²⁸ For more technical descriptions, see *The CBC System for Choice-Based Conjoint Analysis (Version 9)*, Sawtooth Software Technical Paper Series, 2017. For this conjoint survey, I intend to select a “Balanced Overlap” design.

would you choose?” In the survey’s choice tasks, respondents indicate which of the three options they would choose. In each choice task, respondents also are presented with a second question which reads, “Given your knowledge of universities, would you or would you not **actually be willing to enroll at the university that you chose above with the tuition indicated?** As a reminder, please assume you are actually considering enrolling as an undergraduate at a college or university, and you are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.”²⁹

49. Following the twelve choice tasks, respondents in the survey are thanked for their time and the survey is completed.

IX. Analysis

50. Hierarchical Bayes regression estimates of the partworths for each respondent will be obtained from the survey data using software developed by Sawtooth Software, Inc. As described previously, partworths represent the relative preference or utility associated with each level of each product attribute. The overall utility of a product is the sum of the partworths for the attribute levels possessed by the product. The partworths are estimated at the individual respondent level.

51. In order to establish the appropriateness of using the partworths to forecast customer behavior, I will test the fit and predictive ability of the conjoint analysis estimates. One such method is to determine the holdout performance, which measures how well the partworth estimates predict the actual choices made by survey respondents when looking at a subset of the

²⁹ See Brazell, Jeff D., Christopher G. Diener, Ekaterina Karniouchina, William L. Moore, V  lerie S  verin, and Pierre-Francois Uldry (2006). “The no-choice option and dual response choice designs,” *Marketing Letters*, Vol. 17, No. 4 (December), pp. 255-268.

choice tasks not used in the estimation. In other words, if the model is still able to predict product choices for the one choice task that is removed or “held out” from the data used for estimation, I can be more confident in the validity of the model. In very simple terms, I ask the model, “Given the preferences obtained from the partworths estimated from just eleven choice tasks, how well can you predict the product choice in the twelfth?” To get a valid indicator of holdout performance, I will use HB estimation, excluding one of the twelve choice tasks for each respondent from the estimation. I will repeat this process three times, using a different choice task each time, and calculate the percentage of choices that can be predicted correctly with the HB estimates. A purely random approach would predict a choice correctly only 33.3% of the time (one time out of three). It is my experience, based on similar surveys I have conducted, that the HB estimates will be appropriate for making predictions with respect to alternative scenarios.

X. Description of Conjoint Results

52. The results obtained from conducting the conjoint analysis survey will allow me to calculate any reduction in market value (measured in dollars and/or percentage terms)³⁰ attributable to the Closure of the University of Delaware Campus in Spring 2020. Stated differently, I will be able to calculate any reduction in market value between in-person classes and full access to the University’s campus and facilities, compared to the market value of online classes and no access to the University’s campus or facilities, at the time and point of acceptance.

³⁰ The conversion of dollar figures to a percentage amount is a relatively straightforward undertaking, which is done in a fair and conservative way that has been accepted by many courts (*see* ¶ 15 for examples of these cases). This conversion to a percentage amount is described in ¶ 55.

XI. Calculation of the Reduction in Market Value

53. I will use the Market-Based Method to determine any reduction in market value due to the Closure of the University Campus. The Market-Based Method uses the HB partworths to simulate a market in which all customers react to the same choice set of products and prices. I will use standard procedures in the Sawtooth Software HB CBC software to run the choice simulations. Market simulations using HB CBC partworth estimates are often used by firms to simulate what would happen if a new product were introduced to a market, or if a firm decided to change a feature or features of an existing product. Forecasts based on such market simulations are sufficiently accurate such that firms routinely make decisions based on the results of these simulations.³¹ To predict customers' choices in the simulation, I will apply an approach commonly used in marketing research called "Randomized First Choice ("RFC") Simulation." Under RFC, a consumer chooses the product with a probability based on the relative utility of the available choices, where the consumer's utility from a product is calculated as the sum of the estimated partworths for the features provided by the product plus random draws of the unobserved components in the utility.³²

54. The Market-Based Method uses the partworths to predict how customers would react in a hypothetical world in which there are two available configurations of the University of Delaware that vary only in their tuition cost and class and campus format. For each respondent, the partworths for the levels present in each product profile will be summed to obtain an overall relative utility for each of the two configurations of the University of Delaware. These utilities, in

³¹ Orme, B (2020). "Chapter 10: Market Simulators for Conjoint Analysis," *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research (Fourth Edition)*, Manhattan Beach, CA.: Research Publishers LLC, pp. 89-105.

³² The Sawtooth Software HB estimation includes a standard option to perform RFC. The software assumes that the random perturbations on the partworths of each attribute follow a standard Normal distribution and the additional random perturbations at the product level follow a Gumbel distribution.

turn, combined with a decision rule (e.g., here, Randomized First Choice), can be used in a conjoint simulator to calculate market shares for the two universities. Since these two configurations of the University of Delaware are the only universities available in this market simulation, their shares add to 100%. I will use the Market-Based Method to determine the price difference at which the market, as represented by the respondents, would be indifferent between the University of Delaware with in-person classes offered and access to campus and facilities with a higher price, and with online classes (both with access and without access to campus or facilities), but with a lower price. That is, the price difference would be such that respondents would be indifferent between the University of Delaware with a Class and Campus Format level equal to “Classes are offered in person; have access to campus and facilities” with a higher price, and the University of Delaware with a Class and Campus Format level equal to “Classes held online; no access to campus or facilities” or “Classes held online; have access to campus and facilities” with a lower price. When the market is indifferent, the market share for each university is 50%.

55. As described above, the Market-Based Method of calculating any reduction in market value due to the change in Class and Campus Format sets up a hypothetical situation in which there are only two alternative universities in the choice set: one university which has what was promised, e.g., “Classes are offered in person; have access to campus and facilities,” and one university which has what was actually delivered, e.g., “Classes held online; no access to campus or facilities.” For each of the two universities in the simulation, we will hold all other features (except tuition) constant at specific levels; the exact levels we will choose for these other features will not affect our calculations. We then will simulate markets with the lower tuition for the University of Delaware with the Closure of the University Campus. We will keep lowering the tuition of this university until the market is indifferent between the two universities (i.e., each one

has a market share of 50%). That is, we will find the lower price of the second university with online classes; no access to campus or facilities such that half of the market (i.e., as represented by the data from all of the respondents in our analysis) chooses the first university with in-person classes offered and access to campus and facilities, and half of the market chooses the second university with online classes and no access to campus or facilities. The reduction in market value equals the difference between the two tuitions that compensates for the absence of in-person classes and access to campus and facilities. This process will then be repeated at the other tuition levels, lowering the price of the university with online classes and no access to get one measure of reduction in market value, and then raising the price of the university with in-person classes and access to get another.³³ I will choose, among the tuition price differences obtained at the different levels of starting prices, the smallest (which is the most conservative) as the reduction in market value for the university with online classes and no access to campus or facilities.³⁴ This dollar value will then be expressed as a percentage of the highest tuition available in the survey (\$17,250 per semester) to give the reduction in market value on a percentage basis. Using the highest price as the denominator of the percentage reduction in market value is the most conservative method, because it gives the lowest percentage of reduction in market value.³⁵ This percentage will apply equally to all Class members.

³³ To calculate the reduction in market value, it is possible to lower the price of the “less desirable” university, or to raise the price of the “more desirable” one. We will try both methods, starting at all five price points, and will report the reduction in market value as the smallest value found across all starting price points. Note, however, that we cannot raise or lower the price beyond the boundaries used in the conjoint analysis (i.e., \$3,250 and \$17,250). From the lower bound price of \$3,250 we can only raise the price for the more desirable university, and for the upper bound price of \$17,250 we can only lower the price of the less desirable university. The maximum reduction in market value that we can measure is, therefore, $\$17,250 - \$3,250 = \$14,000$.

³⁴ I will also calculate the reduction in market value using linear price partworths. This is conceptually simpler but gives slightly higher (less conservative) results.

³⁵ This is the most conservative method, because the price chosen is in the denominator when calculating the percent reduction in market value and dividing by a larger number gives a lower percentage result.

XII. Expected Conclusions

56. The conjoint analysis I describe in this Declaration is designed to estimate any reduction in market value (measured in dollars and/or percentage terms) due to the Closure of the University of Delaware Campus in Spring 2020, meaning the difference in market value between in-person classes and full access to the University of Delaware's campus and facilities, compared to the market value of online classes and no access to the University of Delaware's campus or facilities, at the time and point of acceptance.

57. The scientific methodology I used to design and intend to use to execute and analyze the survey in this Declaration is sound, reliable, and valid. The results will be relied upon to draw inferences about any reduction in market value attributable to the Closure at issue.

I declare under penalty of perjury of the laws of the United States that the foregoing is true and correct. Executed on July 1, 2022, in Newcastle, Maine.



Steven P. Gaskin

Exhibits:

- A. Steven P. Gaskin Curriculum Vitae
- B. Materials Reviewed
- C. Preliminary Pretests
- D. Final Pretests

Exhibit A: Steven P. Gaskin Curriculum Vitae

E-mail: steven_gaskin@outlook.com

Home Address: 52 North Newcastle Road
Newcastle, ME 04553
(781) 812-3226

Education: MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SLOAN
SCHOOL OF MANAGEMENT, Master of Science in Management, June 1983.
Brooks Prize for Best Master's Thesis.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Bachelor of Science
in Management, June 1977. Naval ROTC Award for Outstanding
Overall Achievement.

Career Positions:

2020-present Independent litigation survey expert

2004-2020 APPLIED MARKETING SCIENCE, INC., Waltham, MA
Principal. AMS is a marketing research and consulting organization with two
main practices in which I consult and oversee projects 1) *Product And
Process Improvement* which helps clients in a broad range of product and
service industries identify and use the Voice of the Customer to develop new
products and services and understand customer behavior and 2) *Litigation
Services* which supports expert testimony related to surveys, including
design, execution, analysis, reporting and critique of opposing expert
reports. Cases include patent damage lawsuits regarding the valuation of
particular product features using conjoint analysis, trademark, class action,
and copyright. Retired from AMS in February of 2020.

2000-2003 ADPILOT, INC., New York City and Sherborn, MA
Chief Technology Officer. Provided consulting on marketing models for
magazine advertising effectiveness, targeting for grocery store consumer
promotions, and consumer packaged goods store/week/upc level promotion
response.

1992-2000 THE DELPHI GROUP, INC., Sherborn, MA
President. Provided consulting on marketing models for forecasting and
promotion response to other market research firms, including the M/A/R/C
Group, Adpilot, Inc., Silknet Software, Sandoz, Schering-Plough, Warner-
Lambert, and Syncra Software. Worked with marketing expert witnesses and
economists on litigation research. Winner of competition to become
forecaster of new vehicle sales for all divisions worldwide for Ford Motor
Company.

- 1989-1992 M/A/R/C, INC., Waltham, MA
Director of Research and Development. Managed the Waltham, MA office. Developed, sold and delivered marketing sciences model applications to Fortune 500 firms. Developed and implemented the RAPIDS sales force sizing and allocation model for pharmaceutical companies around the world.
- 1985-1989 INFORMATION RESOURCES, INC., Waltham, MA
Director of Research and Development. Rebuilt and enhanced the ASSESSOR new product forecasting model. Participated in the early development of the Voice of the Customer methodology for generating customer needs.
- 1982-1985 MANAGEMENT DECISION SYSTEMS, INC., Waltham, MA
Director of Research and Development. Responsible for the development and commercialization of numerous marketing science models including, CATALYST and DEFENDER.
- 1977-1982 UNITED STATES NAVY, Lieutenant aboard guided missile cruiser USS Leahy, CG-16. Served as Gunnery Officer, Electronic Warfare Officer, and Intelligence Officer during cruises from San Diego to the Far East, Indian Ocean, Persian Gulf and Africa. Top Secret Special Background Investigation clearance. Managed extensive ship repairs in shipyard.
- Publications: Hauser, John R. and Steven P. Gaskin (1984). "Application of the "DEFENDER" Consumer Model," *Marketing Science*, Vol. 3, No. 4.
- Urban, Glen L., Theresa Carter, Steven Gaskin and Zofia Mucha (1986). "Market Share Rewards to Pioneering Brands: An Empirical Analysis and Strategic Implications," *Management Science*, Vol. 32, No. 6 (June). Winner, TIMS College of Marketing Award for Best Paper of 1986.
- Gaskin, Steven, Theodoros Evgeniou and Daniel Bailiff (2007). "Two-Stage Models: Identifying Non-Compensatory Heuristics for the Consideration Set then Adaptive Polyhedral Methods within the Consideration Set," *Proceedings of the Sawtooth Software 2007 Conference*, Santa Rosa, CA.
- Hauser, John R., Min Ding and Steven P. Gaskin (2009). "Non-compensatory (and Compensatory) Models of Consideration-Set Decisions," *Proceedings of the Sawtooth Software 2009 Conference*, Delray Beach, FL.
- Hauser, John R., Abbie Griffin, Robert L. Klein, Gerald M. Katz, and Steven P. Gaskin (2010). "Quality Function Deployment (QFD)," *Wiley International Encyclopedia of Marketing*, edited by Jagdish N. Sheth and Naresh K. Malhotra.

Gaskin, Steven P., Abbie Griffin, John R. Hauser, Gerald M. Katz, and Robert L. Klein (2010). "Voice of the Customer," *Wiley International Encyclopedia of Marketing*, edited by Jagdish N. Sheth and Naresh K. Malhotra.

Ding, Min, John Hauser, Songting Dong, Daria Dzyabura, Zhilin Yang, Chenting Su and Steven Gaskin (2011). "Unstructured Direct Elicitation of non-compensatory and Compensatory Decision Rules," *Journal of Marketing Research*, Vol. 48 (February), 116-127.

Gaskin, Steve. (2013). "Navigating the Conjoint Analysis Minefield," *Visions*, Vol. 37 (No. 1), pp. 22-25.

Griffin, Abbie, Brett W. Josephson, Gary Lilien, Fred Wiersema, Barry Bayus, Rajesh Chandy, Ely Dahan, Steve Gaskin, Ajay Kohli, Christopher Miller, Ralph Oliva and Jelena Spanjol (2013). "Marketing's roles in innovation in business-to-business firms: Status, issues, and research agenda," *Marketing Letters*, Vol. 24 (May), 323-337.

Gaskin, Steven P. (2015). "The David Vases: Considering Serpentine Waves on Yuan Blue and White," *Orientations*, Vol. 46, No. 4 (May), pp. 29-37.

Gaskin, Steven P., Dr. Aprajita Sharma, and Dr Ellen S. Smart (2021). "For the Love of Broken Porcelain," *Orientations*, Vol. 52 (September/October), pp. 54-62.

Expert
Testimony

Barbara Schwab et al. v. Philip Morris USA, Inc. et al.
Case No. CV-04-1945 (JBW)(SMG), E.D. of New York
Light Cigarettes Litigation, deposed in connection with support of John Hauser, expert for plaintiffs

Computer Sciences Corporation v. Ascension Health
AAA No. 58-117-Y-00290-08
Customer Satisfaction Survey evaluation (2011 Report)

Linares et al. v. Securitas Security Services, USA et al.
Superior Court, State of California, Los Angeles County
Employment Survey (2011 Report, deposed Sept. 14, 2011)

Devi Khoday and Danise Townsend, et al., v. Symantec Corp. and Digital River, Inc., United States District Court, District of Minnesota, 0:11-cv-00180 (JRT-FLN), Software Service Conjoint Analysis (2013 Report, deposed Aug. 15, 2013)

JDS Therapeutics, LLC and Nutrition 21, LLC, v. Pfizer Inc., Wyeth LLC, Wyeth Consumer Healthcare Ltd. and Wyeth Consumer Healthcare LLC, United States District Court, Southern District Of New York, Case No. 1:12-cv-09002-JSR, Customer Survey evaluation (2013 Report, deposed Oct. 1, 2013)

Stone Creek, Inc. v. Omnia Italian Design and Bon-Ton Stores, Inc., United States District Court, District of Arizona, Case No. 13-cv-00688-NVW, Customer Survey evaluation (2014 Report, deposed Mar 25, 2014; testimony at trial Oct. 23, 2015)

Shannon Adams, et al., v. Target Corporation, United States District Court, Central District of California, Case No. CV13-05944-GHK (PJWx), Conjoint Analysis Design (2014 Declaration, deposed Sept. 26, 2014)

Veronica's Auto Insurance Services, Inc. v. Veronica's Services, Inc., United States District Court, Central District of California, Case No. CV13-05445-ODW, Analysis of Store Location Data (2014 Report)

Eat Right Foods, Ltd. v. Whole Foods Market, Inc., Whole Foods Market Services, Inc., and Whole Foods Market Pacific Northwest, Inc., United States District Court, Western District of Washington, Case No. 3:13-cv-06032, Confusion Survey (2015 Report, deposed May 8, 2015)

Angela Sanchez-Knutson, et al., v. Ford Motor Company, United States District Court, Southern District of Florida, Case No. 14-61344-CIV-DIMITROULEAS (Report regarding a conjoint analysis, Nov. 13, 2015, deposed Dec. 11, 2015)

Kenai Batista, Andy Chance, and Crystal Quebral, et al., v. Nissan North America, Inc., United States District Court, Southern District of Florida, Miami Division, Class Action: Case No. 1:14-cv-24728-Civ-Scola/Otazo-Reyez (Declaration regarding the methodology for a conjoint analysis, Jan. 12, 2016)

Robert Tomassini, et al., v. Chrysler Group LLC (n/k/a FCA US LLC), United States District Court, Northern District of New York, Case No. 3:14-cv-01226-MAD-DEP (Declaration regarding the methodology for a conjoint analysis, Feb. 14, 2016, deposed Jul. 25, 2017)

In Re Azek Building Products, Inc. Marketing and Sales Practices Litigation, United States District Court, District of New Jersey, MDL No. 2506 (KM)(MCA) Case No. 2:12-cv-06627 (MCA) (MAH) (Report regarding a conjoint analysis, May 16, 2016, deposed Jul. 1, 2016)

In Re: Lenovo Adware Litigation, United States District Court, District of Northern California, Case No. 5:15-md-02624-RMW (Declaration regarding the methodology for a conjoint analysis, Jul. 22, 2016)

In Re Shaun Sater, *et al.*, v. Chrysler Group LLC, *et al.*, United States District Court, Central District of California, Eastern Division, Case No. 5:14-cv-00700-VAP-DTB (Declaration regarding the methodology for a conjoint analysis, Aug. 3, 2016, deposited Sept. 16, 2016)

In Re Simply Orange Orange Juice Marketing and Sales Practices Litigation, United States District Court, Western District of Missouri, MDL No. 2361 Master Case No. 4:12-md-02361-FJG (Declaration regarding the methodology for a conjoint analysis, Jul. 8, 2016, Report, Aug. 19, 2016)

Benjamin Hankinson et al. v. R.T.G. Furniture Corp. et al., United States District Court, Southern District of Florida, Case No. 9:15-cv-81139-COHN/SETZLER (Declaration regarding the methodology for a conjoint analysis, Sept. 1, 2016, Report, Oct. 3, 2016)

Billy Glenn et al. v. Hyundai Motor America and Hyundai Motor Company, United States District Court of California, Case No. 8:15-CV-02052-DOC-KES (Declaration regarding the methodology for a conjoint analysis, May 1, 2017, deposited Jul. 21, 2017, Report, Mar. 23, 2018)

Tom Kondash et al. v. Kia Motors America, INC., and Kia Motors Corporation, United States District Court, Southern District of Ohio, Case No. 1:15-cv-506 (Declaration regarding the methodology for a conjoint analysis, Jul. 7, 2017, deposited Nov. 17, 2017)

Jennifer Beardsall et al. v. CVS Pharmacy, Inc., Target Corporation, Walgreen Co., Wal-Mart Stores, Inc., and Fruit of the Earth, Inc., United States District Court, Northern District of Illinois, Case No. 1:16-cv-06103 (Declaration regarding the methodology for a conjoint analysis, Dec. 22, 2017)

In Re Arris Cable Modem Consumer Litigation, United States District Court, Northern District of California, San Jose Division, Case No. 17-cv-1834-LHK (Declaration regarding the methodology for a conjoint analysis, Mar. 9, 2018, deposited Apr. 5, 2018; Report, Jan. 31, 2019; deposited Feb. 14, 2019)

Teresa Elward et al. v. Electrolux Home Products, Inc., United States District Court, Northern District of Illinois Eastern Division, Case No. 1:15-cv-09882 (Declaration regarding the methodology for a conjoint analysis, Apr. 20, 2018, deposited Jul. 27, 2018)

Stephen Hadley et al. v. Kellogg Sales Company, United States District Court, Northern District of California, Case No. 5:16-cv-04955-LHK-HRL (Declaration regarding a demand analysis and the methodology for a conjoint analysis, April 30, 2018, deposited May 30, 2018, Report, Sept. 17, 2018, deposited Oct. 5, 2018)

Doru Bali et al. v. Fiat Chrysler Automobiles N.V., FCA US LLC, Sergio Marchionne, VM Motori S.P.A., VM North America, Inc., Robert Bosch GmbH, and Robert Bosch LLC,, United States District Court, Northern District of California, San Francisco Division, Case No. 3:17-md-02777-EMC (Report regarding the methodology for and example of two conjoint analyses, Jun. 6, 2018, deposited Jul. 23, 2018)

Michelle Gyorke-Takatri et al. v. Nestlé USA, INC. and Gerber Products Company, Superior Court for The State of California in and for The County of San Francisco, Case No. CGC 15-546850 (Declaration regarding the methodology for a conjoint analysis, Sept. 10, 2018)

Debbie Krommenhock and Stephen Hadley et al. v. Post Foods LLC, United States District Court, Northern District of California, Case No. 3:16-cv-04958-WHO (JSC) (Declaration regarding a demand analysis and the methodology for a conjoint analysis, January 11, 2019, deposited Feb. 28, 2019, report Apr. 24, 2019, deposited May 15, 2019)

Jacob Beaty and Jessica Beaty et al. v. Ford Motor America, United States District Court, Western District of Washington, Case No. 3:17-CV-05201 (Declaration regarding the methodology for a conjoint analysis, Feb. 22, 2019, deposited Mar. 26, 2019)

Barry Braverman et al. v. BMW of North America, LLC and BMW AG, United States District Court, Central District of California, Western Division, Case No. 8:16-cv-00966-BRO-SS (Report regarding a conjoint analysis, Mar. 29, 2019, deposited May 29, 2019)

Hudock et al. v. LG Electronics U.S.A., Inc. et al., United States District Court, District of Minnesota, Lead Case No. 16-cv-01220 JRT-KMM (Report regarding a conjoint analysis, May 8, 2019, deposited Jun. 7, 2019)

Suresh Persad et al. v. Ford Motor Company, United States District Court, Eastern District of Michigan, Southern Division, Civil Action No. 2:17-cv-12599-TGBMKM (Declaration regarding a conjoint analysis, Jun. 25, 2019, Report Nov. 7, 2019, deposited Dec. 27, 2019)

Nike, Inc. v. Skechers U.S.A., Inc., United States District Court, District of Oregon, Portland Division, Case No. 2:17-cv-08509-JAK-E (Report evaluating a survey, Jul. 29, 2019, deposited Sept. 18, 2019)

Paul Stockinger et al. v. Toyota Motor Motor Sales, Inc., United States District Court, Central District of California, Case No. 17-cv-00035-VAP-KS (Declaration regarding a conjoint analysis, Sept. 12, 2019, deposed Oct. 9, 2019)

Vicky Maldonado et al. v. Apple Inc. et al., United States District Court, Northern District of California, San Francisco Division, Case No. 3:16-cv-04067-WHO (Report regarding a conjoint analysis, Feb. 10, 2020)

Jennifer Nemet et al. v. Volkswagen Group of America, et al., United States District Court, Northern District of California, San Francisco Division, Case No. 3:17-cv-04372-CRB (Report regarding a conjoint analysis, Feb. 14, 2020, deposed July 16, 2020)

Jeffrey Koenig and Marcellus Holt v. Vizio, Inc., Superior Court of the State of California, County of Los Angeles, Case No. BC702266 (Declaration regarding a conjoint analysis, February 26, 2020, deposed April 23, 2020. Report August 30, 2021, deposed October 5, 2021)

Will Kaupelis and Frank Ortega v. Harbor Freight Tools USA Inc., United States District Court, Central District of California, Case No.: 8:19-cv-1203 (Declaration regarding a conjoint analysis, March 2, 2020, deposed May 28, 2020)

Banh et al. v. American Honda Motor Company, Inc., United States District Court, Central District of California, Western Division, Case No.: 2:19-cv-05984 (Report regarding a conjoint analysis, April 9, 2020, deposed June 4, 2020)

Daniel Zeiger and Danz Doggie Daytrips v. WellPet LLC, United States District Court, Northern District of California, San Francisco Division, Case No. 3:17-CV-04056-WHO (Report regarding a conjoint analysis, June 29, 2020)

Javier Cardenas et al. v. Toyota Motor Corporation, United States District Court Southern District of Florida, Case No. 18-22798-Civ-Moreno (Report regarding a conjoint analysis, October 14, 2020)

Thomas Bailey v. Rite Aid Corporation, United States District Court, Northern District of California, Case No. 4:18-cv-06926 (Declaration regarding a conjoint analysis, October 16, 2020)

Laura Bechtel and Troy Thoennes v. Fitness Equipment Services, LLC, DBA Sole Fitness, United States District Court, Southern District of Ohio Western Division, Case No. 1:19-Cv-00726 (Declaration regarding a conjoint analysis, December 2, 2020)

Daniel Prescod v. Celsius Holdings, Inc., Superior Court for the State of California, County of Los Angeles, Case No. 19STCV09321 (Declaration regarding a conjoint analysis, December 16, 2020, deposited April 2, 2021)

Sherida Johnson et al. v. Nissan North America, Inc., United States District Court, Northern District of California, San Francisco Division, Case No. 3:17-cv-00517 (Declaration regarding a conjoint analysis, February 16, 2021, deposited April 22, 2021)

Derick Ortiz v. SIG Sauer, Inc., United States District Court, District of New Hampshire, Case No. 1:19-cv-01025-JL (Report regarding a conjoint analysis, Feb. 26, 2021)

Ralph Milan et al. v. Clif Bar & Company, United States District Court, Northern District of California, Case No. 4:18-cv-02354-JD (Report regarding a conjoint analysis, March 2, 2021, deposited April 29, 2021)

Darren Fulton and Craig Jude Broussard v. Ford Motor Company, United States District Court Southern District of Texas, Case No. 2:18-cv-00456 (Report regarding a conjoint analysis, March 15, 2021, deposited April 20, 2021)

Clarence Simmons et al. v Ford Motor Company, United States District Court Southern District of Florida, Case No. 9-18-cv-81558-RAR (Report evaluating a survey, June 10, 2021, deposited July 30, 2021)

Felix Obertman v. Electrolux Home Products, Inc., United States District Court Eastern District of California, Case No. 2:19-cv-02487-KJM-AC (Declaration regarding a conjoint analysis, June 14, 2021, deposited August 13, 2021)

Sherris Minor v. Baker Mills, Inc.; And Kodiak Cakes, LLC., United States District Court Northern District of California, Case No. 20-cv-02901-RS (Report regarding a conjoint analysis, August 2, 2021, deposited August 30, 2021)

Brooke Smith v. The Ohio State University, Court of Claims for the State of Ohio, Case Nos. 2020-00321JD, (Declaration regarding a conjoint analysis, June 23, 2021, deposited August 24, 2021)

Gila Duke v. Ohio University, Court of Claims for the State of Ohio, Case No. 2021-00036JD, (Declaration regarding a conjoint analysis, July 30, 2021, deposited September 22, 2021, Hearing January 18, 2022)

Caitlyn Waitt and Jordan Worrell v. Kent State University, Court of Claims for the State of Ohio, Case No. 2020-00392JD, (Declaration regarding a conjoint analysis, September 10, 2021)

Christopher Julian, Mark Pacana, Paul Fiskratti, and Wayne Leward v. TTE Technology, Inc., United States District Court Northern District of California, Case No. 3:20-CV-02857-EMC (Declaration regarding a conjoint analysis, August 27, 2021, deposited September 24, 2021)

Mackenzie Weiman and Sarah Baumgartner v. Miami University, Court of Claims for the State of Ohio, Case Nos. 2020-00614JD, 2020-00644JD (Declaration regarding a conjoint analysis, September 24, 2021, Hearing January 18, 2022)

Lawrence Keba v. Bowling Green State University, Court of Claims for the State of Ohio, Case No. 2020-00639JD (Declaration regarding a conjoint analysis, September 24, 2021)

Tyler Allen Click, Troy Bowen, Bailey Henderson, Ethan Galan, Luis G. Ochoa Cabrera, Homero Medina, Michael Guidroz, Scott A. Hines, Bryan J. Tomlin, Quentin Alexander, And Jacqueline Bargstedt, et al., v. General Motors LLC, United States District Court, Southern District of Texas, Corpus Christi Division, Case No. 2:18-Cv-00455-Ngr (Report Regarding a Conjoint Analysis, October 12, 2021)

Howard Clark, Michelle Moran, et al., v. S.C. Johnson & Son, Inc., Superior Court of the State of California, County of Alameda, Case No. RG20067897 (Report regarding a conjoint analysis, November 12, 2021)

Lance Dutcher v. Google LLC, d/b/a YouTube, and YouTube, LLC, Superior Court of the State of California, County of Santa Clara, Case No. 20CV366905 (Declaration regarding a conjoint analysis, February 10, 2022, deposited May 27, 2022)

Lakeita Kemp, et al., v. Nissan North America and Nissan Motor Co., Ltd., United States District Court, Middle District of Tennessee, Nashville Division, Case Nos. 3:19-cv-00843 and 3:19-cv-00854 (Report regarding a conjoint analysis, February 22, 2022)

Mark D. Chapman, et al., V. General Motors LLC, United States District Court, Eastern District of Michigan, Case No. 2:19-Cv-12333-TGB-DRG (Report Regarding a Conjoint Analysis, February 24, 2022, deposed April 12, 2022)

Terry Sonneveldt, et al., v. Mazda Motor of America, Inc. D/B/A Mazda North American Operations and Mazda Motor Corporation, United States District Court, Central District of California, Case No. 8:19-cv-01298-JLS-KES (Declaration regarding a conjoint analysis, March 11, 2022, deposed March 29, 2022)

Mocha Gunaratna and Renee Camenforte v. Dr. Dennis Gross Skincare, LLC, United States District Court, Central District of California, Case No. 2:20-cv-02311-MWF-GJS (Declaration regarding a conjoint analysis, April 1, 2022, deposed May 23, 2022)

Professional
Societies:

INFORMS (The Institute for Operations Research and Management Science)

Louviere, Jordan (1988). “Conjoint Analysis Modelling of Stated Preferences: A Review of Theory, Methods, Recent Developments and External Validity,” *Journal of Transport Economics and Policy: Stated Preference Methods in Transport Research*, Vol. 22, No. 1 (Jan.) pp. 93-119.

Maldonado v. Apple, Inc., No. 3:16-cv-04067-WHO (N.D. Cal.)

Milan v. Clif Bar and Company, No. 3:18-cv-02354-JD (N.D. Cal.)

Orme, Bryan K. (2020). *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research (Fourth Edition)*, Manhattan Beach, CA.: Research Publishers LLC.

Poret, Hal. (2010). “A comparative empirical analysis of online versus mall and phone methodologies for trademark surveys,” *The Trademark Reporter*, Vol. 100, No. 3 (May-June), pp. 756-807.

Prescod v. Celsius Holdings, Inc., No. 19STCV09321 (Cal. Super. Ct., L.A. County)

Sanchez-Knutson v. Ford Motor Co., No. 14-civ-61344 WPD (S.D. Fla.)

Sawtooth Software, Inc.’s Lighthouse Studio software. See www.sawtoothsoftware.com.

Simonson, I. and R. Kivetz (2012). “Demand Effects in Likelihood of Confusion Surveys: The Importance of Marketplace Conditions,” *Trademark and Deceptive Advertising Surveys: Law, Science, and Design*, Shari Seidman Diamond and Jerre B. Swann, Eds, Chicago, IL.: ABA Publishing, American Bar Association.

Singer, Eleanor (2012). “The Use and Effects of Incentives in Surveys,” Survey Research Center, Institute for Social Research, University of Michigan, p. 1-23.

Smith v. The Ohio State University, No. 2020-00321JD (OH)

Stipulation and [Proposed] Order for Release of E-mail Addresses (including Exhibit A) (Filed 04/13/2022)

The CBC System for Choice-Based Conjoint Analysis (Version 9), Sawtooth Software Technical Paper Series, 2017.

Weiman v. Miami University, Nos. 2020-00614JD (OH) and 2020-00644JD (OH)

Websites:

https://sawtoothsoftware.com/help/lighthouse-studio/manual/estimating_utilities_with_hb.html

<https://www.ams-inc.com/>

<https://www.prodege.com/>

Materials Reviewed for Attribute Development

University Attribute:

<https://catalog.upp.pitt.edu>

<https://nces.ed.gov>

<https://www.ncsu.edu/>

<https://www.pitt.edu/>

<https://www.stonybrook.edu/>

<https://www.udel.edu/>

<https://www.umd.edu/>

<https://www.usnews.com>

Undergraduate Teaching Ranking:

<https://www.usnews.com>

Student-Faculty Ratio Attribute:

<https://www.usnews.com>

4-Year Graduation Rate Attribute:

<https://nces.ed.gov>

Ethnic Diversity Index Attribute:

<https://www.usnews.com>

Class and Campus Format Attribute Initiatives Attribute:

Consolidated Class Action Complaint (09/03/2021)

Tuition Per Semester Attributes:

Consolidated Class Action Complaint (09/03/2021)

https://studentservices.ncsu.edu/wp-content/uploads/2020/09/Fall-2019_archive.pdf

<https://www.collegefactual.com>

<https://www.delawareonline.com>

<https://www.usmd.edu/usm/adminfinance/budget/FY2019/umcp2019.pdf>

Exhibit C: Changes Made to Conjoint Survey Due to Preliminary Pretesting

Overview

AMS conducted pretesting of the university conjoint survey under my direction to ensure that the survey content and questions were understood by respondents. The pretesting process was divided into two stages. In the first stage, preliminary pretesting, the focus was to identify and correct possible issues in the survey. Ten (10) pretest respondents were sufficient to proceed to the second stage, final pretesting. The purpose of final pretesting was to confirm the study would be understood and found not to be biased or leading by respondents. Ten (10) respondents completed final pretesting.

A number of potential issues were identified in the course of preliminary pretesting of the conjoint survey. The potential issues are summarized below, along with their associated findings and solutions.

Conjoint Survey Preliminary Pretesting	
Potential Issue	Finding and Solution
1. Awkward placement of parenthetical in QS7 (“Below is a list of colleges (in alphabetical order) and universities in the United States.”)	Moved parenthetical to after “universities” so it now reads: “Below is a list of colleges and universities (in alphabetical order) in the United States.”
2. Respondents indicated slight confusion with the wording of the SAT and ACT “middle 50%” wording in the University attribute description.	Changed wording to: “Fall 2019 [SAT/ACT] composite score for the 25 th to 75 th percentile of enrolled students”
3. Wanted to make sure respondents were clear in their understanding of the context in which they are making their choices.	<p>For the dual response question, added: “As a reminder, please assume you are actually considering enrolling as an undergraduate at a college or university, and you are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.”</p> <p>Additionally, added the following instruction text in the conjoint exercise: “As a reminder, you are making your university choices prior to the COVID-19 pandemic, so it should not be a factor in your decisions.”</p>

Exhibit D: Final Pretests

CONJOINT PRETEST – FINAL PRETEST 1

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☒ Yes... If yes, how? ENTER TEXT HERE: I think the sponsor is trying to understand what students value the most when picking schools to attend and they may publish their findings on the website or something.
- ☐ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way?

What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 2

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☐ Yes... If yes, how? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 3

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☒ Yes... If yes, how? ENTER TEXT HERE: I have a guess that they might gather all of the similar results based on each category to see which was the most important and which ones were the most important factors in the decision.
- ☐ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 4

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☒ Yes... If yes, who? ENTER TEXT HERE: Pretty vague, but I assume it's a financial department of a college or university but I'm not sure which one.
- ☐ No
- ☐ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☒ Yes... If yes, how? ENTER TEXT HERE: I assume the information would be used to prioritize improving different aspects of a college in order to attract the most students.
- ☐ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASING ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way?

What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 5

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☐ Yes... If yes, how? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASSED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 6

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☒ Yes... If yes, who? ENTER TEXT HERE: One of the schools listed.
- ☐ No
- ☐ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☐ Yes... If yes, how? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 7

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☐ Yes... If yes, how? ENTER TEXT HERE:
- ☒ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASSED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 8

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☒ Yes... If yes, how? ENTER TEXT HERE: anyone who wants to go college and see which college is best fit.
- ☐ No
- ☐ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[**READ**] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 9

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☐ Yes... If yes, how? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure

CONJOINT PRETEST – FINAL PRETEST 10

- The following questions will be asked after the respondent has completed the survey

Thank you for taking the time to complete the survey. As a reminder, your responses will be kept completely confidential, and we will not use any of your responses to sell you anything. We would now like to ask you a few additional questions.

Q1. Do you or do you not have a belief about who might be the sponsor of this survey?

- ☐ Yes... If yes, who? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q2. Do you or do you not have an opinion about how the sponsor would use the results of this survey?

- ☐ Yes... If yes, how? ENTER TEXT HERE:
- ☐ No
- ☒ Unsure

Q3. Did you or did you not have difficulty understanding the questions and instructions?

- ☐ Yes, I had difficulty understanding the questions and instructions
- ☒ No, I did not have difficulty understanding the questions and instructions
- ☐ Unsure

[IF "YES," PROBE FOR DIFFICULTIES. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND DIFFICULT TO ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question or instruction difficult to answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q4. Did you or did you not feel like the survey was trying to get you to answer in a certain way, that you otherwise would not? [IF RESPONDENT ASKS FOR CLARIFICATION: In other words, did you or did you not find any of the questions leading or biased?]

- ☐ Yes, I felt the survey was trying to get me to answer in a certain way
- ☒ No, I did not feel the survey was trying to get me to answer in a certain way
- ☐ Unsure

[IF "YES," PROBE. FOR EACH QUESTION OR INSTRUCTION THAT THEY FOUND LEADING OR BIASSED ASK OPEN ENDED QUESTIONS: You indicated you felt the survey was trying to get you to answer in a certain way. Can you please explain why you felt this way? What about the question was leading or biased? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q5. Were you or were you not able to answer all of the questions?

- ☒ Yes, I was able to answer all of the questions
- ☐ No, I was not able to answer all of the questions
- ☐ Unsure

[IF "NO," PROBE FOR DIFFICULTIES. FOR EACH QUESTION THAT THEY COULDN'T ANSWER, ASK OPEN ENDED QUESTIONS: Why was the question difficult to provide an answer? Would you have preferred a different way to ask the question or give the instruction? Would you please give an example? ASK "Anything else?" UNTIL THE RESPONDENT SAYS, "Nothing else."]

ENTER TEXT HERE:

Q6. In doing the choice exercises, did you or did you not understand that you were asked to imagine that you were deciding at which university to enroll as an undergraduate?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

[READ] Please think back to the part of the survey where you were asked to choose your most preferred university ...

Q7. Did you or did you not understand that the universities you were asked to choose among only varied on the features described and that all the *other* features of the university choices were the same for all the universities presented?

- ☒ Yes, I understood
- ☐ No, I did not understand
- ☐ Unsure

Q8. Did you or did you not look at all or almost all of the features in making your choices?

- ☒ Yes, I looked at all or almost all of the features in making my choices
- ☐ No, I did not look at all or almost all of the features in making my choices
- ☐ Unsure

Q9. In making your choices, did you or did you not consider some features to be more important than others?

- ☒ Yes, I considered some features to be more important than others
- ☐ No, I did not consider some features to be more important than others
- ☐ Unsure